

Extensions

Extensions

As with the control panels section, below are descriptions of nearly every Apple Extension ever released. If you're curious what the different extensions do, here's your source. If you're interested in whether or not you need various init's, use the descriptions below to decide whether or not you want/need them. Most are from Apple; however a few are things that are so universal that I included them here (for non-Apple extensions, download [The InformInit](#)).

- !TYC: patches an incompatibility with early PowerMac AV models and the Apple 21-inch monitor
- !PowerAV Update **PM**: an update to !TYC
- IICI/IISI Monitors: allows the Monitors control panel on the IICI and IISI to reflect the capabilities of the built-in video card on these computers. Removing this extension will still allow a choice of bit depth, etc. However, some options, such as "gamma" settings, will not be available.
- 040 VM Update: only for 68040 Macs, specifically the LC 57x and LC 63x series; fixes a problem with virtual memory and the 040 processor cache when copying. No longer necessary under 7.5.3.
- 630 SCSI Update: on LC/Performa/Quadra 630-series computers, fixes a problem with large block SCSI transfers (such as those that occur when using a backup DAT tape drive) where the system may hang. Supposedly fixed in the latest system update.
- 7.5.2 Printing Fix 1.1 **[.5/.5] PM**: This is the latest version of the extension Apple previously released to help with printing problems on the Power Mac 7200, 7500, 8500, and 9500 under System 7.5.2. In addition to previous fixes for using busy network printers, version 1.1 corrected a similar problem using LocalTalk to print to a network printer. Please note that this extension requires Open Transport 1.0.7 or later, and the extension isn't of use on earlier Macs. Incorporated into the System or System Update 7.5.2 under System 7.5.3
- 720K Floppy Disk Formatter: part of System 7.1 Update 3.0. Requires the File System Manager. According to an old Apple document, this was used "to allow you to format low-density floppy disks as 720K MFM disks." Also, Apple was supposedly going to release a non-GCR floppy drive in a low-cost model, and this extension would allow you to create 720K HFS disks.
- 7200 Graphics Acceleration (v1.0.1) **PM**: supposedly, the 7200, unlike the 7500 and 8500, has a graphics accelerator chip on the motherboard. Without this file, the graphics are run solely by the CPU, while with it certain QuickDraw operations are taken over by the

accelerator chip. Thus, not having this extension installed could slow down certain graphics functions. Power Computing's PowerCenter and PowerTower computers use the 7200's chip set, so they also benefit from having this extension installed. According to MacWEEK, this file can boost display speed by up to 20% on computers with the 7200 chip set. The benefits from this extension are much more noticeable if you add an extra MB of VRAM to your 7200. With the stock 1MB of VRAM, the video bus is only 32 bits wide. However, after adding the extra 1MB (so that you now have 2MB), the video data path is 64 bits. This increases the graphics speed of the 7200, even without this extension installed. However, it seems that the 7200 Graphics Acceleration extension really takes advantage of this wider bus, and the difference when it is installed is very noticeable. There are two web sites that I have found which give further information on this extension: [here](#) and [here](#).

- 7200 Graphics Driver: I have never seen this extension myself, but have been told that it does indeed exist. The 7200 Graphics Driver does NOT replace the 7200 Graphics Acceleration extension (above). The two pieces of software are independent of each other, and you should always keep the 7200 Graphics Acceleration extension installed. The 7200 Graphics Driver fixes a problem with random pixels appearing on the display when the Color Look-Up Table changes and/or an application uses certain custom cursors. These problems tend to happen during the startup routine of certain games which fade in and/or out; they also happen in applications such as Fetch.
- 7500/8500 Graphics Driver (v1.3.f0): an obscure Apple "unsupported" video driver. From the "ReadMe" file: "used for the motherboard video on PowerMac 7500/8500 based systems... On average, the standard driver would spend 7 ms inside a spin loop each time the color palette was changed. The new driver saves the changes to a global variable and updates the hardware to avoid this delay... Furthermore, 7500/8500 based machines would clear one interrupt too many when updating the CLUT... Hence the mouse would be jerky. Marathon players who use the mouse will notice a dramatic improvement when items are picked up or opponents destroyed (Marathon calls SetEntries/DirectSetEntries to make the screen flash). Side Effect: Apps that fade the screen to black may now jump to black immediately." Supposedly the 7500/8500 Graphics Driver will be included in the next System Update AFTER 7.5.5. If you problems with this driver, reboot and hold down "command shift N D" until the progress bar is about 1/2 done. Then remove the driver and reboot. You cannot use this version of the driver if you use MacsBug.
- 950 Color Addition: addresses an obscure video bug in the Quadra 950 on pre-7.1 systems. The fix was incorporated into System 7.1.
- A/ROSE: "Apple Real-Time Operating System Environment" -- only necessary for certain older Nubus cards which use the MCP (Macintosh Coprocessor Platform) platform and run the Apple Real-Time Operating System (i.e. Apple's short Ethernet card, Token Ring 4.16 NB card, Serial NB card, and Coax/TwinAx NB card).
- ADBReInit (v1.0): an Apple "unsupported" extension. From the Apple Technote: "The ADBReInit extension prevents memory from being moved at interrupt time, which could cause the PowerBook 140 and 170 models, as well as the Macintosh Quadra 700, 900, 950 models, to hang or crash if "ADBReInit" is called. Informal testing indicates that this is more likely to happen while AppleShare is active (file sharing is turned on). ADBReInit normally is never called on a Macintosh Quadra because connecting ADB devices while the CPU power is on is discouraged. There is a specific instant that the PowerBook uses the call: When coming out of Sleep mode, ADBReInit is called to determine whether or not external ADB devices are attached." This extension is provided by Kensington with their TurboMouse and Thinking Mouse for backwards compatibility. Supposedly, this extension has been included in the System itself since System 7.1.
- ADSP: AppleTalk Data Stream Protocol. Provided networking protocol under pre-7.0 systems. More specifically, it provided data flow and full duplex data delivery over a network. However, in order for the benefits to be realized, both Macs had to be running this extension.

- AMMS MPEG Decoder: hardware driver for the Apple MPEG Media System Card.
- Apple Built-In Ethernet (v1.0.5)/ Ethernet (Built-In) (v1.0.4): Used by Open Transport/Classic AppleTalk to allow access to the built-in Ethernet port on your Mac. Depending upon your Mac model and/or your system version prior to updating to 7.5.3, you could have either or both of these extensions installed; although they are quite different in code, they seem to perform essentially the same function. A System 7.5.3 "Unity" universal system folder contains both files, which would seem to imply that they are different files to be used under difference configurations. However, some experimenting has found that on all the systems/models tested, either one can be used. In addition, having both installed does not seem to cause any problems. The main outward difference I've seen is that "Ethernet (Built-In)" does not show its icon at startup, while "Apple Built-In Ethernet" does. I have been told that Ethernet (Built-in) is intended for PCI Macs, while Apple Built-In Ethernet is intended for non-PCI Macs, but on my 7500 I don't have either, only EtherTalk Phase 2! NOTE: installing the DOS Compatibility Update 1.5 updates to/ installs Ethernet (Built-In) 1.0.4.
- Apple Color SW Pro CMM (v1.0.1): provides alternate color tables for the discontinued Color StyleWriter Pro.
- Apple CD-ROM (v5.1.7) [61.5/72]: necessary to use your Mac's CD-ROM drive. Version 5.1.7 added support for 6X drives. 5.1.6 added support for Apple PC Compatibility Cards for PCI Macs. 5.1.5 fixed a problem with multi-session PhotoCD disks and the Peter and the Wolf CD. Use the newest version necessary for you.
- Apple Ethernet LC, Apple Ethernet NB, Apple Ethernet CS: these Ethernet drivers are necessary only if you have an LC, NuBus, or "Com Slot" Mac using the corresponding Ethernet expansion card.
- Apple Event Manager: allows applications (including the Finder) to send commands to other applications (again, including the Finder). For example, in The InformInit, when you click on the little "GO!" buttons, The InformInit sends an Apple Event to Netscape telling it to go to the URL listed. This file is incorporated into the AppleScript extension with System 7.5 and above.
- Apple Multimedia Tuner: enhances QuickTime 2.0 and Sound Manager 3.0. Once you upgrade to QuickTime 2.1 and Sound Manager 3.1, or System 7.5.3/Update 2.0, this is no longer necessary.
- AppleScript (v1.1) [39.5/320]: Allows for "scripting" of system and compatible application functions. Many scripts are provided with your Mac, or you can program your own scripts if you have the patience to learn the language. If the Finder Scripting Extension is installed, you can even "script" the Finder. The Apple Events Manager is built into recent versions of this; you can see this when AppleScript loads: first the Apple Events Manager icon appears, then the AppleScript icon overwrites it.
- AppleShare (v3.6.2) [30.5/37]: if you're not on a network, you don't need it. If you are on a network, you only need it if you want to access other computers, as it is used to provide access to networked volumes. Version 3.6.1RevB, the version installed by the latest full system software installers, is incompatible with Connectix SpeedDoubler 1.1 and earlier, and could possibly be incompatible with other "copy accelerators" such as Copy Doubler. Specifically, the bug affects file transfers over an Ethernet connection. Connectix has updated SpeedDoubler to 1.3 (get the update [here](#)) and has also released a patch that can be used with earlier versions of SpeedDoubler and other third-party copy utilities. Download the patch from [here](#). However, the Connectix patch is no longer needed under System 7.5.3 Revision 2 and SpeedDoubler 1.1.2 or later. [To get version 3.6.2 of AppleShare, you must install the latest AppleShare Workstation software,

available on Apple's FTP servers. Note that this installer incorrectly sets the bundle bit for AppleShare 3.6.2 to "off." While this is not a major problem, if you run Norton Disk Doctor, you will be alerted to it and should choose to fix it.] NOTE: a few people have claimed that even with System 7.5.5 and Speed Doubler 1.3.1, the above patch alleviates a problem when copying to a mounted UNIX server where the server thinks that you don't have write permission.

- AppleVision (v1.0.4): if you have a 1710AV monitor and a PCI Mac, you must use v1.0.4 and the Monitors & Sound control panel. 1.0.2 is not compatible with PCI Macs running 7.5.3. If you have a non-PCI Mac, you must use 1.0.2, the Sound control panel, and the Monitors control panel. To update to version 1.0.4, you must first install 1.0.2, which is available from Apple's ftp sites, before you update to System 7.5.3.
- ASFU Fixer [0/0]: A third party INIT from GDT Technologies which disabled the DMA serial driver originally found on PowerMac and Quadra AV machines, reverting to the unused non-DMA serial driver in the ROMs of those machines. Apparently, the newer DMA driver was incompatible with GDT's PowerPrint and the StyleWriter printer. Also needed by a few other products because they were incompatible with the DMA serial driver and GeoPort architecture. However, applications which used the standard GeoPort architecture of these machines could encounter problems of their own when using the "patched" driver. The SerialDMA extension (now a part of System 7.5.3) eliminated the need for this extension.
- Assistant Toolbox (v1.3.1): a set of routines for the PowerBook File Assistant which allow file synchronization, better battery management, and easier mobile computing. It provides support for a persistent RAM disk (normally, you would lose your RAM disk when the computer is shut down) and deferred printing when a printer is not available (if you are using the LaserWriter driver). It provides better cursor visibility on passive-matrix displays. It allows AppleTalk to be activated without restarting the computer. It also works with PCI Macs to enable deferred printing when a printer is not available (again, only if you are using the LaserWriter driver). This extension may conflict with the LaserWriter Select 310 printer software to block printing. A solution is to turn off background printing in the Chooser. Version 1.2 of Assistant Toolbox is not compatible with Open Transport, and will automatically turn off AppleTalk every time you restart.
- At Ease 7.5 Layer Patch: fixes a crash when using At Ease, and the "Show Desktop" box is unchecked in the General Controls control panel.
- At Ease Startup: forces your Mac to start up in the At Ease launcher instead of the standard Mac Finder (see "At Ease" in the "Control Panels" chapter).
- Audio Volume Extension **PM**: on 5200, 5300, 6200, and 6300 series Macs, this file replaces/fixes problems with the Internal Modem Sound extension (actually, a newer version of the IMS extension is incorporated into the Audio Volume extension). Allows modem sounds to be played through the Mac's own speakers (or external speakers). Also loads a new sound driver which fixes a bug with poor sound quality on sounds played from the hard drive or CD-ROM's.
- AV Serial: I have seen two sources of information on this. One said that this is only needed on AV-card equipped Macs, which does not include the AV PCI Macs or the Centris/Quadra 660AV/840AV. The other said that it is only needed on the Centris/Quadra 660AV/840AV. Regardless, it is supposed to have fixed (a) difficulties when printing with the LaserWriter Select 310 printer; (b) a possible system error when both the serial port and an AppleTalk network connection are being used heavily; and (c) a possible system crash when simultaneously receiving a fax and transferring files over a network.

- AV/PPC Serial Extension: installed by the Global Village modem software on older AV and PowerPC systems. Used on pre-7.1.3 systems to enhance the serial port to allow the higher connect speeds which the Teleports were capable of supporting.
- Basic Color Monitor: on Quadra models 700, 800, 900, and 950, as well as on Centris and Quadra models 610 and 650, some users have had problems with overly-green monitor displays. This extension fixes the bug on all Apple, and SOME non-Apple, monitors. However, on some non-Apple monitors, this extension would cause the screen to go blank. This problem cannot be resolved by simply removing the extension, since the settings are saved to the PRAM of the machine (and since you can't see anything ;-)). The solution is to restart, zap the PRAM a couple times, and immediately start with extensions off. Then remove the extension.
- CapsLock: Mainly useful for 100-series PowerBooks; puts an icon in the menu bar when the Caps Lock key is engaged (newer PowerBooks and the Duo series all have a light on the caps lock key to let you know it is engaged; the 100-series PowerBooks didn't).
- CDRemoteINIT: under system 7.1P3, this extension was necessary to use the CD Remote DA.
- CFM Update **PM**: Installed by older versions of QuickDraw 3D. CFM stands for Code Fragment Manager. With native-code applications, CFM loads parts of the program as it needs them, one of the vaunted features of PowerMacs. This is some sort of an "update" to the CFM built into the system. Some users have reported less crashing and less hard disk grinding under low-memory situations. Incorporated into the System software under System 7.5.3
- CFM-68K Runtime Enabler (v1.0.4) **[72/544]**: enables the 680x0 implementation of the "Code Fragment Manager" which was formerly only available for PowerPC computers. Installed by LaserWriter 8.4.x, Desktop Printer 2.0.x, OpenDoc, Cyberdog, the Apple Media Tool, and some versions of AOL 3.0, in addition to some third-party applications. The code fragment manager allows applications to share code through "shared libraries." This extension makes it easier for developers of applications to design their programs to run on both 680x0 and PowerPC computers without having to write separate programs for both processor families. This file is not needed on PowerMacs. Note that there is a bug in the current version of the CFM-68K Runtime Enabler. Some applications which rely on this file will not function properly, which according to Apple can result in crashing and loss of data. Apple recommends disabling this file (note that the name of the file has a space at the beginning, so it will show up near the top of your extensions list when viewed by name). You may not be able to use applications which use this file until a newer version which fixes this bug is released.
- Clipping Extension (v7.1.4) (a.k.a. Finder Clipping Extension) **[NA]**: allows you to create text "clippings" when you drag selections from Drag & Drop-savvy applications to the desktop. These clippings can be viewed by themselves, or dragged into documents. If this is disabled, drag-and-drop editing within and between applications will still work. This requires the Drag Manager, which is built-in to System 7.5 and later.
- Color Classic Update: fixes a bug that prevented Apple IIe cards from working under System 7.5. Adds the correct video mode for the Apple IIe-type display to the video driver.
- ColorPicker (v2.0.1) **[1/320]**: allows additional color schemes (i.e. changing from Red/Green/Blue to Hue/Saturation/Lightness) in "choose color" dialogues (i.e. in the "Label" and "Color" control panels when you try to customize the color choices; enacted with the "more choices" button).

- Color SW 2000 Series CMM (v1.0): allows you to use ColorSync with the Color StyleWriter 2400. NOTE: If you have a 68000 Mac, this extension will not allow it to start up. You should start up with extensions off, remove this file, then restart.
- Color Sync (v2.1.1) [40/384]: enables the ColorSync system (see the "Color Sync System Profile" entry in the "Control Panels" chapter).
- DAL: enables network activity using Data Access Language, formerly called CL/1. From Apple's Tech Info Library:

Data Access Language is Apple's client/server protocol for remote data access and is based on ANSI standard SQL (Structured Query Language). DAL is optimized to provide decision-support applications with uniform access to data, regardless of the different brands of databases, the different host platforms, or the different types of networks.

The DAL client software is included as a part of System 7.0 and can be transparently accessed by applications written to the Data Access Manager API. These applications can access data from DAL servers running on host computers, across all DAL-supported networks. Therefore, with the Data Access Manager and the included DAL client software in System 7, applications can "speak" in an identical fashion to many different types of host databases. Apple Computer Inc. is currently delivering DAL servers through APDA for the following environments:

- VAX/VMS (for DEC Rdb, Informix, Ingres, Oracle, and Sybase)
- MVS/TSO (for IBM DB2)
- VM/CMS (for IBM SQL/DS)

DEC also provides DAL as a part of the DEC PathWORKS product. Apple is also working with software and hardware vendors to extend DAL client and server support to other industry platforms."

- Desktop Manager Fix (v1.0): part of the AppleShare server software package. Supposedly improves desktop interaction in a multi-user environment.
- Desktop Printer Extension, Desktop Printer Spooler, Desktop PrintMonitor (all v2.0.1) [NA]: Under LaserWriter 8.3 and higher, these extensions (although PrintMonitor is actually an application) allow you to have a printer icon on your desktop, to which you can drag and drop documents to be printed. Double-clicking the icon brings up a PrintMonitor specifically for that printer. If you have more than one Desktop Printer, you can drag and drop/schedule documents between them. Version 2.0 includes the option of selecting printers from the menu bar, control strip, or Print dialog box. Also, the desktop printer icons can be moved to anywhere on the hard drive. If you are using this software on a 68k Mac, you will also have the CFM-68K Runtime Enabler" extension installed, which has been found to be problematic (see its entry above). Note that it may be necessary for some people to increase the memory allocation for the Desktop Print Monitor application (using the "Get Info" command) in order to enable background printing with LW8.4.x.
- Display Enabler 2.0.3: Supposedly only needed by multiscan/multisync monitors. This file actually has a space at the beginning of its name to allow it to load first in the startup process. Adds functionality to Energy Saver and to the Monitors control strip module by allowing you to switch resolutions on-the-fly. According to Apple, the Display Software 2.0 installs Display Enabler version 2.0. This version is not necessary on the PCI Power Macintosh computers and computers running System 7.5.3, since it is built into the System (although its

presence will not disrupt anything). HOWEVER: The AppleVision Software 1.0.2 installs Display Enabler 2.0.2 and they do recommend this version if you have the AppleVision 1710AV or AudioVision 14" Display. However, version 2.0.2 conflicts with a few third-party utilities, so Apple released Display Software 2.0.2, which installs version 2.0.3, which supposedly fixes a bug with Now Startup Manager (!). NOTE: on the MacFixIt page, Ted Landau has tried to clarify information on this file. The latest summary from him is that if you are running System 7.5.3, version 2.0.2/2.0.3 will not be installed by the Display Software 2.0.2, because a newer version of Display Enabler/Manager is already built into System 7.5.3. I would recommend visiting his site for the best summary of this issue (see the "Resources" section of Chapter 1). Basically, the Display Enabler debacle is unsolved at this point. Even Apple's tech support is clueless on this one. There is a conflict between the Display Enabler extension and Now's Startup Manager where Startup Manager will not allow the Display Enabler to load. The solution is to either rename Display Enabler (with a few spaces at the front of the name) so that it loads before Startup Manager, or (and this supposedly doesn't always work) to use Startup Manager to load Display Enabler as the very first extension. This will supposedly be fixed in an upcoming version of Startup Manager.

- Drag&Drop Extension/ Drag Enabler /Dragging Enabler (a.k.a. Macintosh Drag & Drop): these extensions, which all perform similar functions, have been incorporated into the System since System 7.5.0; they provided Drag and Drop support under Systems 7.0 and 7.1. They are still installed by numerous programs, such as Now Utilities and ccMail, for universal compatibility but, again, are not needed under System 7.5 and later system.
- Drive Firmware Update Extension (v1.2): only useful for Macs with IDE hard drives. Fixes a bug with audible drive noise. You must restart twice after installing this extension to activate its features.
- Duo Battery Patch: fixed a conflict with PowerBook Duo 210, 230, and 250 computers which had an Express Modem installed and which were using version 1.0 of the PowerBook Duo Enabler. In this configuration, the Duo battery would not recharge. This problem was fixed by a newer version of the PowerBook Duo Enabler.
- EM Extension (v3.0.3): allows the "Extensions Manager control panel to load before any other startup files. Also allows you to open the Extensions Manager control panel at startup by holding down the space bar.
- EM Sound Update: provides added sound support on 630 series Macs with internal Express Modems, so that your modem's sound will play through your Mac's speaker.
- Energy Saver Extension: used in conjunction with the Energy Saver Control Panel. See the "Energy Saver" entry in the Control Panels chapter.
- ENET Compatibility (v1.0.3) **PM**: fixes a bug with PCI Macs on a Novell Netware network where the computer would crash at shutdown or restart. With this extension installed you will be able to use Netware, but your machine will take quite a bit longer to shut down (like about two minutes!). The delay can be avoided by logging out of the Netware tree before shutting down or restarting. Some users have reported bus errors, "illegal instruction" error messages, freezing, bombing, and crashing which they attributed to having this extension installed when it was not needed.
- Ethernet (Built-In): see "Apple Built-In Ethernet" above.

- **EtherTalk Phase 2 (v2.5.7)**: driver software which allows you to connect your Mac to an Ethernet network. Supposedly no longer needed under System 7.5.3, but several readers claim that they still need it when running Classic Networking. When running Open Transport, they don't need it.
- **EtherTalkPrep**: on older systems, worked with EtherTalk Phase 2 to establish and maintain Ethernet connections. Supposedly no longer needed under 7.5.3.
- **External CD Sound**: on pre-7.5.1 systems, allowed you to listen to audio CD's on an external Apple CD-ROM drive. Integrated into the system software under 7.5.1.
- **FaceSpan**: Applescript Development environment extension that allows you to create graphical user interface (GUI) front-ends to Applescripts.
- **Fax Terminal 7.5 compatibility**: provides compatibility for Apple's Fax Terminal software when running under System 7.5. This file is not needed if you are using Apple Express Modem Software v1.5.5 or later.
- **File Sharing Extension (v7.6.2) [3.5/0]**: enables your Mac to share files with other computers on a network.
- **File System Manager (v1.2.4)**: File System Manager (FSM) is an obscure part of the Macintosh operating system that was proposed for System 7.0 but didn't officially ship until System 7.5.1, when it was part of the System itself. Providing support for external file systems, the extension was used on earlier systems by developers to support FSM functionality and to utilize its features without having to rewrite the entire Macintosh File Manager system. It is used by the System for cross-platform exchange with ProDOS and PC systems and is used by Macintosh PC Exchange. It also supports "plug-in" file for different types of media/file systems.
- **Find File Extension (v1.1.1) [0/0]**: allows you to access the new System 7.5 "find file" by typing command-F. Without this installed, it brings up the older "Find File" in the system. However, you will still be able to access the newer find feature through the Apple Menu. For some strange reason it also disables the alert box which says that the functionality of "Find File" is limited when the Finder Scripting Extension is not installed.
- **Finder Help (v7.5.5) [NA]**: provides balloon help for the Finder. You should be able to trash this, as most of its info is contained in the newer Apple Guide, but if you plan on installing LaserWriter 8.4, you must have this installed (who knows why?). Fortunately, Apple has included a copy of Finder Help with the newer LaserWriter installers.
- **Finder Scripting Extension (v7.5.5) [0/0]**: needed if an application uses Finder functions in its AppleScript. Allows you to write scripts which use the Finder. Also allows you to perform operations on "Find" search results (i.e. dragging a folder/file from the "find" window to the desktop, trash, or to another folder). Supposedly, if this extension is not installed, the Startup and Shutdown Items folders in the System Folder won't "work."
- **Finder Update (v7.5.3) [NA] PM**: formerly called "PowerPC Finder Update" but name was changed in System 7.5 Update 1.0. Provides support for PowerMac native code in the Finder. Corrects some memory-related problems. Also puts that "Memory will decrease by xxx if virtual memory is turned on..." message in the "Get Info" box. With the release of System 7.5.3, this update is integrated into the Finder

itself.

- Font Extension 3 (vJ-1.0.4): prevents one cause of a system hang on systems running Japanese Language Kit 1.2. Included with the Japanese Language Kit as well as with KanjiTalk.
- Foreign File Access (v5.1) [114.5/153]: enables your Mac to work with CD-ROM discs which don't use the standard Macintosh file system, by using the corresponding component files. This includes audio CD's, ISO 9660, PhotoCD, and High Sierra formats (see "COMPONENTS"). Note that this means you need this extension along with the respective component in order to read a non-Mac format CD-ROM. In addition, Foreign File Access allows you to mount both the Mac and PC sectors of multi-format CD-ROMs. NOTE: the RAM usage of Foreign File Access will vary depending upon which components are installed; if you'd like to keep your RAM usage down, you should only activate the components for the file formats you actually use.
- Frontmost Extension: Frontmost is an application package (that comes with the full AppleScript commercial product) that allows you to create sophisticated user interfaces for AppleScript applications. The Frontmost Extension acts as a run-time assistant for projects saved as miniature applications.
- Graphics Accelerator (v1.1) PM: provides video acceleration for PCI Macs using an ATI video card. Version 1.0.5 caused a problem with windows and toolbars in WordPerfect; this bug was fixed in version 1.0.7.
- Hardware System Update 1.0: part of System 7.1 Update 1.0. Provided numerous system-level improvements. This file was not designed for use on Performa models.
- Hardware System Update 2.0: part of System 7.1 Update 2.0: Provided system-level improvements to increase overall system reliability. This file was not designed for use on Performa models.
- Hardware System Update 2.0.1: part of System 7.1 Update 3.0: Provided system-level improvements to increase system reliability and performance. For all Macs running System 7.1 except for AV systems, which already have these enhancements built into their ROM.
- InLine Filter: Helps AppleScript and PlainTalk Speech Recognition work together. Allows Worldscript users to type scripts "in-line" instead of to a separate text bar. Crashes WordPerfect 3.1, but Novell has released a patch.
- Insomnia (v7.1): originally created for Apple PowerBooks to keep them from "falling asleep." It was never intended to be used on desktop Macs, but it seems that Energy Star Compliant monitors fall asleep when connected to several models of PowerComputing desktop computers. Power Computing's answer is to install Insomnia, and include it on their System software CDs.
- Installer Cleanup: you will most likely see this extension immediately after installing new Apple software. The Apple software installer often places this temporary extension in your Extensions folder to make sure that the installation process was successful and that everything was installed in the proper place. It loads during the restart immediately following installation, and should then disappear on its own. However, some extension/startup managers will not allow the Installer Cleanup extension to do its thing. In addition, if you're using one of these managers, at some time in the past you may have seen an extension called "Installer Cleanup" and turned it off/disabled it. Even though you may have later deleted it, most extension/startup managers will remember your preference (of turning it off) and automatically disable any

identically-named extension which gets installed; in this case, it would be the one that's put in after an installation. So it never gets to do its thing, and subsequently never deletes itself. You should make sure that if you install Apple software and the Installer Cleanup extension is "installed," that you allow it to load at the very next startup. It should disappear. On the other hand, sometimes it doesn't disappear no matter what you do. If you still have this extension after several restarts, or if you just find it sitting there, and everything seems to be working fine, you should be able to trash it.

- Internal Modem Sound **PM**: on 5200, 5300, 6200, and 6300 series Macs, this file fixed a problem with internal Global Village modems where no modem sound was heard. It is now a part of the Audio Volume Extension (see above).
- Intelligent Battery Update: updates the battery manager on 500-series computers (actually updates the batteries themselves). The 500-series batteries have a microprocessor built into the battery to monitor the battery's "vital signs." Sometimes the data inside this microprocessor becomes corrupt and causes the System software to receive incorrect information about the battery's status (power remaining, etc.). This extension, along with the Intelligent Battery Recondition application, updates the information in the battery's microprocessor. It should be used if you experience any of the following symptoms: the PowerBook fails to recognize the battery; the battery will not charge; two batteries are installed, but only one is recognized; at least one battery is installed, and the "battery monitor" control strip module shows the icon of a plug and a right facing triangle. NOTE: the application only works on the battery in the right-hand battery bay. If you have two or more batteries, you will have to use the application once for each battery by placing each one in the right-hand bay.
- IR Talk: only used by the 500 and above series PowerBooks with an InfraRed port. Allows AppleTalk connections through the IR port using the AppleTalk/Network control panels.
- LC Monitors Extension: adds functionality to the Monitors control panel for LC series Macs.
- Letterhead: part of the QuickDraw GX package, this extension enables the "Letterhead" paper type option in the "Page Setup..." window of compatible applications.
- LocalTalk DMA (v1.0.1): part of the obscure "System 7.5.3 Revision 2.1," this file fixes a bug with transferring files over LocalTalk on Performa 6400/180 and 6400/200 computers. This fix is supposedly included in the System 7.5.5 Update, and should no longer be needed.
- Macintosh Drag & Drop: see Drag&Drop Extension above.
- MacTCP Token Ring Extension: allows you to use the TCP/IP protocol over a Token Ring network.
- MODE32: under System 7, gives the Mac II, IIfx, IICx, or SE/30 the ability to run in 32-bit addressing mode. All other Macs either have 32-bit addressing capability built into the ROM, run in 32-bit addressing mode all the time (AV models, PB 500s, and all PowerMacs), or are incapable of running in 32-bit addressing mode (running System 6 or have a 68000 processor). With 32-bit addressing "on," your Mac can take advantage of more than 8MB of RAM. Under System 7.5, a new version of MODE32 was released. You MUST use MODE32 7.5 if you are running System 7.5.
- Mount IDE Drive: allows Macs with IDE hard drives to mount these drives when the Mac is booted from another disk or device.

- N-Up Printing: part of the QuickDraw GX package, this extension allows you to print more than one page on a single sheet of paper by dividing the page into smaller sections and reducing the printing size. Up to 16 pages can be printed on a single 8.5x11 sheet.
- Network Extension (v7.5.5) [NA]: allows you to choose what type of network your Mac is attached to using the AppleTalk or Network control panels. Also allows you to activate Personal File Sharing from the Finder. This file is used in conjunction with Open Transport or Classic Networking to enable network access.
- Network Launch Fix (v1.0.2): on 68040 Macs, fixed a bug when launching applications over a network. Incorporated into system 7.5 and later.
- PC Card Extension (v2.0): allows newer PowerBooks to use expansion cards that adhere to the PC Standard.
- PC Card Modem Extension (v2.0.3): allows newer PowerBooks to use modem expansion cards that adhere to the PC Standard
- PC Clipboard Translator: on Macs with a DOS Compatibility Card, allows cross-platform Clipboard capability (for example, to "copy" text on the PC side, then "paste" it on the Mac side).
- PC Net Exchange (v1.0.1): works with the PC Exchange control panel to help Mac users share DOS/Windows files over an AppleTalk network with users of the AppleShare Client for Windows software. If PC Net Exchange is installed on a Mac client system, you can "map" files on the Mac to Mac OS documents in the same way that PC Exchange lets you map PC files on locally attached PC disks. Any mapping that you've previously defined is automatically implemented. If PC Net Exchange is installed on a server, files that users have copied or saved to that server by using AppleShare Client for Windows appear as "PC" (text) files, and you can map these files to Mac OS application document types with the PC Exchange control panel. If PC Exchange is not installed, such files appear on the server as "PC" (text) files, but you cannot map these files to Mac OS document types.
- PCI Network Legacy Layer & PCI Network Legacy Loader: there is an update available for 6360/6400/5400 series systems which fixes SCSI problems and provides additional Ethernet support. The "6360/64xx/54xx Update" installs these two extensions to the Extensions folder. If you are using the optional Ethernet CS II card for Ethernet capability, these files provide support for the MacIPX and Local Area Transport (LAT) network protocols. (The update is available from Apple's support sites.)
- Power Format Patch Extension: fixed some problems with floppy disks on Macs with a 180 MHz or faster processor. Rolled into the System under System 7.5.5 Update.
- PowerBook Monitors Extension: provides added functionality for external monitors connected to a PowerBook. Contains the monitor information strings that show the resolution and scan rate for the attached monitor, as well as the PowerBook video card information string. Also provides the option of adjusting the gamma setting on color PowerBooks.
- PowerCD Extension: driver for the Apple PowerCD portable external CD-ROM drive.
- PowerMac Debugger: part of Apple's E.T.O. compiler tools. Used by developers to debug remotely from another Mac. If you have this extension installed and try to use the GeoPort modem, you will get an error that the GeoPort/serial port is already in use.

- PowerPC Finder Update **PM**: part of System 7.5.0. Provides Finder support for native PPC code. Under System 7.5 Update 1.0, the name was changed to Finder Update. Under System 7.5.3, both files were incorporated into the Finder itself and are no longer necessary.
- PowerPC Interrupt Extension (v1.0): if you have a PowerPC desktop system and System 7.5.5, you may have experienced your computer freezing for several seconds before returning to normal operation, or completely freezing and requiring a restart. This extension fixes one source of this problem. It is intended for users who have installed the System 7.5.5 Update on a desktop Power Macintosh, PowerPC-based Performa, PowerPC Mac OS-compatible, or on any desktop computer with a PowerPC upgrade card. It is unnecessary on PowerPC PowerBooks. Note: some people have reported extension conflicts with this file. A number of people seem to have more problems after installing it! One suggested solution is to make the PowerPC Interrupt Extension load last (by changing its name, or by using a third-party startup file manager). If you do have more problems and can't find a solution, you should probably just remove it.
- PowerPC Monitors Extension (v7.5) **PM**: needed for use of the AV14, AV15 and AV17 monitors; superseded by Display Enabler 2.0 and later. Also needed by PM 6100AV/ 7100AV/ 8100AV models to enable video-out (such as to an RGB monitor) in the Monitors control panel.
- Print Monitor (v7.1.2): if you are not using Desktop Printing (see the "Desktop Printer Extension" entry in this Extensions section), this application (it's not really an extension) allows you to monitor and control your print jobs.
- Printer Descriptions **[NA]**: this folder in the extensions folder contains printer descriptions for almost every Apple printer. It's mainly a waste of space; trash all the descriptions but the ones you use, or might use in the future (how many of us are using an ImageWriter II or a StyleWriter I?)
- Printer Selector (v2.0.1): under LaserWriter 8.4 and above, adds a menu of configured printers to your menu bar for quick printer switching.
- Printer Share & Printer Share GX (v1.1.3): Allows your Mac to be used as a print server (i.e. another computer on the network can send a document to your computer and then your computer sends it to the printer; this frees up the processor on their computer--not useful for most people). Also allows you to share non-networkable printers (such as the StyleWriters) over a network. You must install Printer Share onto both the server and the client.
- Processor Info Extension **PM**: on 5200, 5300 and 6200 series Macs, fixes a bug where the computer would report the incorrect bus and processor speeds.
- ProDOS File System: allowed pre-7.5 Macs to recognize ProDOS/Apple IIe disks. Incorporated into PC Exchange 2.0.2 and later, and is incompatible with System 7.5.x.
- Quadra Monitors Extension: allows the Monitors control panel on Quadra- and Centris-series computers to reflect the capabilities of the built-in video. Provides information on the resolution and scan rate for an attached monitor. If you remove this extension, the monitor will work fine; however, the extra "options" such as gamma control will be inoperable.

- Quadra AV Monitors Extension: same as above, only for Quadra AV- and Centris AV-series computers, so it includes the AV video display options.
- QuickDraw GX: enables the QuickDraw GX printing system. Note that if this extension is installed, you must have GX-compatible printer drivers. Non-GX drivers will not even show up in the Chooser.
- Record Button: provides support for the "record" button on the Apple Adjustable Keyboard. Now incorporated into the AV and PowerMac series' ROMs.
- Scanner: driver used by all "Apple-compatible" scanners (basically, all Apple scanners and any third-party scanners which were designed to use the Apple driver).
- Scripting Additions: enhances the language of the AppleScript system by adding special features such as the time of day, day of the week, or date. When installed, AppleScript behaves as if these additions are part of the standard language. This extension is only required when using a script that incorporates them.
- SCSI Manager 4.3 / SCSI Manager 4.3.1: the new SCSI Manager (4.3.x) system added several new features (such as SCSI 2 compliance, concurrent asynchronous I/O, and disconnect and reconnect) to the Mac's SCSI architecture. There is a lot of conflicting information out there about these extensions. Even Apple's own Tech Info Library gives contradictory explanations. The following is the best summary I can offer (and it is admittedly confusing): Version 4.3 is part of the ROMs on all Power Macintosh and Quadra AV computers, and is installed as a separate extension by the System 7.5 CD, even on these machines which already have it in ROM. It is incorporated into the System under System 7.5.3 and later. So anyone running System 7.5.3 or later should not have any version of this extension installed. The new (4.3/4.3.1) SCSI system is supposedly supported on all PowerPC and 68040 Macs, except for the 630 series and 68040 PowerBooks (including Duos). If your computer doesn't require this extension, you should probably delete it. (In yet another source of confusion, one Apple article claims that having the extension installed when not needed can cause serious problems, while another said that it would not do any harm. This is clearly a situation where too many people at Apple are trying to explain something that none of them knows enough about!) The remaining info is only for people not running System 7.5.3 or later: Non-QuadraAV 68040 Macintosh computers require the SCSI Manager 4.3 extension under System 7.5, or the SCSI Manager extension under System 7.5.1. The SCSI Manager 4.3.1 extension from System 7.5 Update 1.0 contains software fixes needed only on 68040-based Macintosh computers and the PowerPC Upgrade Card. Even though Apple claims that the new SCSI system is not supported on 630-series and PowerBooks, they also say that version 4.3.1 of the extension is needed on 630 machines, the PowerBook 150, and the Quadra AV models to fix possible data corruption problems. It is also supposedly used on those computers to fix a potential crash problem with some (unspecified) external hard drives.
- SerialDMA 2.0.2 [17.5/?]: first, a note on the DMA chip: a computer's processor supervises the transfer of data between memory and connected devices. This takes time away from other processor functions. PowerMacs and the AV Macs have what are called direct memory access (DMA) chips, which handle some or all of this data transfer processing. SerialDMA 2.0 was originally a rewrite of the serial drivers that shipped with the first AV Macs (the Centris 660AV and Quadra 840AV) and were later carried over to Apple's first line of Power Macs and their derivative models. Version 2.0.2 of SerialDMA patches some remaining bugs and adds support for Apple's newer PCI Power Macs. In addition to offering greater reliability, better performance, higher baud rates, and a number of bug fixes, version 2.0.2 should offer significant performance improvements on 68040-based AV Macintoshes, as well as fix printing problems with StyleWriters on the Power Mac 7200, 7500, 8500, and 9500. Also provides support for speeds of up to 230,400 baud. Pre-7.5.3, SerialDMA had known problems on

PCI Macs with the Serial Port Arbitrator extension that's included with AppleTalk Remote Access (ARA) and with the Port Juggler extension. However, under System 7.5.3, Serial DMA is incorporated into the System or System Update 7.5.2, and these incompatibilities are reportedly resolved.

- Shared Library Manager (v2.0.1) [NA]: supports loading, unloading, and sharing of object-oriented code, including all "shared library" files. Provides support for Open Transport. This extension is needed on both 680x0 Macs (for universal support) and on PowerMacs (for emulation support). Note that if one does a clean install of System 7.5.5, and then afterwards fresh-installs Microsoft Word 5.1a, the Microsoft installer removes the latest version of SLM and replaces it with an older version (1.1).
- Shared Library Manager PPC (v2.0.1) [NA] PM: supports loading, unloading, and sharing of native object-oriented code, including all "shared library" files. Provides PowerPC-native support for Open Transport and other libraries. Both this extension and the "Shared Library Manager" (above) are needed for TO to function properly on a PowerMac, but 680x0 users do not need this one.
- Slow SCSI Extension: addresses a potential conflict between PowerBook 5300 series computers and slow SCSI devices (such as single-speed CD-ROM drives, Zip drives, and other PowerBooks in SCSI disk mode). Not all PowerBooks will experience this problem and even PowerBooks that do will not necessarily experience it on a consistent basis (even with different units of the same make and model). NOTE: You should only install this extension if you are experiencing constant freezes or crashes when transferring files with a particular slow SCSI device, since installing this extension will impact performance with ALL SCSI devices by 10 to 50 percent! You can use a startup manager to disable the extension when not needed.
- Sound Input Amplification: adds the "microphone amplification" option to the Sound control panel. Some microphones, such as the Apple PlainTalk microphone, produce a "line-level" signal which does not need amplification to be properly received by your computer's sound hardware. However, other microphones produce a "mic-level" signal which needs to be amplified. If you are using a microphone which produces a mic-level signal, you will need to turn microphone amplification ON.
- Sound Manager 3.2.1 [0/96]: PowerMac native. Sound Manager 3.2 was incorporated into the System in System 7.5.3. Version 3.2 included asynchronous sound playback and better Power Mac performance. Version 3.2.1, which is a separate extension and is part of the QuickTime 2.5 package, supposedly provides even better low-memory performance and better multi-channel sound via a new sound clock component. However, it includes no new "features." If you disable version 3.2.1, the version (3.2) included in the System will be used instead. If you are not using System 7.5.3, you should install v3.2.1 to benefit from the added functionality of the 3.2.x Sound Managers (however, on a Quadra with a PowerPC card and System Software 7.5.1, you may need to update your System Software to 7.5.3 to use Sound Manager 3.2.x). Note that the QuickTime 2.5 installer will only "Easy Install" v3.2.1 if an older version is present, so be sure that you have your older Sound Manager extension present before you install, or else do a "custom" install.
- Startup Tuner [NA]: part of the System 7.5.3 revision, fixes a problem with the Startup Disk control panel where the Mac may not startup from the selected disk. Only useful on the models for which the Revision is recommended (see Chapter 2). Not necessary under System 7.5.5.
- System 7 Tuner: part of System 7.0, this extension was part of the System Tune-Up disk. It provided better memory management for the initial release of System 7.

- Text Preview: when using ClarisWorks 4.0, and other compatible applications, shows previews of TEXT files in the preview window of the "open" dialog box.
- Thread Manager (v2.1): an addition to the Macintosh Toolbox that enables "concurrent programming" for real multitasking within an application. Supports cooperative and preemptive threads of execution at the application level, but not at the system level. This is sort of the Mac's version of "multi-tasking" (although true multitasking occurs across applications and includes System operations). Incorporated into the system starting with 7.5. Version 2.0.1 was the last "official" Apple release, but some applications, such as TurboGopher 2.0.3, seem to install version 2.1. Regardless, if you are running System 7.5 or later you don't need it.
- TokenTalk Phase 2 (v2.5.7): driver used by the Apple Token Ring card and the Network/AppleTalk control panels.
- TokenTalk Prep (v2.5.2): provides driver support for TokenTalk Phase II
- Trackpad Climate Control (v1.1): reduces unexpected pointer movements caused by humidity or moisture on the trackpad. Only works on the PowerBook 190, 1400, and Duo 2300. You should not use this extension if you don't have pointer movement problems, as it could actually make the pointer less responsive.
- TrueType: needed by System 6.0.7 and all subsequent versions of System 6 to print TrueType fonts, as well as to display them on screen.
- Video Out Default (PAL) (v11.2): used by the Apple Video Player. On the standard U.S. System, the default video-out for the Apple Video Player is NTSC. Outside of the U.S., the standard video format is PAL; this extension changes the Apple Video Player default to PAL.
- Video Startup (v1.4.2) [22/0]: provides support for the Apple Video Player; needed to use the AVP. NOTE: If you are going to install System 7.5 Update 2.0, first check the version number of both Video Startup and the Apple Video Player. During the installation, you may get a message that says something like "a newer version is already installed." However, chances are it really isn't, and you do need to install. If you did already have 1.4 installed, leave it. If you have a version prior to 1.4, ignore the installer's warning and install the "older" version. This is a bug in the 7.5 Update 2.0 installer. You should end up with v1.4. If not, you should go back and do a custom install of only the Apple Video Player software. There is a version 1.4.2 which is available from the CoolTalk for MacOS package.
- WorldScript Power Adapter (v7.5.3): see entry in the "WorldScript" section of the "Groups" chapter.
- ~AudioVision: part of the AudioVision 14" monitor software package. Only needed on pre-7.5 systems.